

The University of Chicago

FACTORS ASSOCIATED WITH
THE READING ACHIEVEMENT OF
CHILDREN FROM A MIGRATORY
POPULATION

A PART OF A DISSERTATION SUBMITTED TO
THE FACULTY OF THE DIVISION OF THE
SOCIAL SCIENCES IN CANDIDACY FOR THE
DEGREE OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF EDUCATION

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By
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Reprinted from
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FACTORS ASSOCIATED WITH THE READING ACHIEVEMENT OF CHILDREN FROM A MIGRATORY POPULATION. I

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FROM the beginning of our national history, mobility of the population has been one of the characteristics of life in the United States. The expansion of war industries in certain areas of the country resulted in two new types of internal migration: (1) the movements of construction workers to new plant and camp sites for relatively short periods of time and (2) the movements for relatively long duration made by both defense and nondefense workers to war-industry areas.

Among the many problems created by these migrations are those relating to the care of the children in the families of migrant war workers. Questions arise regarding the school achievement of children in such circumstances. Pre-war studies of migrant children by Seagoe,¹ Dawe,² and Grant³ showed that nonmigrant chil-

dren were, in general, superior to migrant children in total school achievement, while Finney⁴ found that nonmigrants were superior in all subjects except geography, history and civics, and arithmetic problems. Munz⁵ found nonmigrants superior in certain grades and migrants in others, while Walton⁶ found that only 15.5 per cent of 167 migrant children in the Imperial Valley of California were at normal grade placement.

On the other hand, Sackett's study⁷ of migrant children in the Panama Canal Zone led him to conclude that these children were handicapped very little more in getting through school,

¹ May V. Seagoe, "The Transient Child," *Journal of Juvenile Research*, XVI (July, 1932), 251-57.

² D. Theodore Dawe, "Migratory Children: Educational Achievement Status of the Migratory Children in Kern County," *Sierra Educational News*, XXXIV (September, 1938), 12, 38.

³ Jettie Fern Grant, "Educational Achievement and Needs of Migratory Children in California," *California Journal of Elementary Education*, XI (August, 1942), 22-30.

⁴ Gladys Cline Finney, "A Comparative Study of the Relative Achievement of English and Spanish Transient and Non-transient Sixth Grade Groups." Unpublished Master's thesis, University of Arizona, 1936. Quoted in Emil L. Larson, "Migration and Its Effect on Schools," *Elementary School Journal*, XLI (December, 1940), 283-97.

⁵ Martin Munz, "Transiency and Its Relation to the Progress of Pupils." Unpublished Master's thesis, University of Arizona, 1937. Quoted in Emil L. Larson, *op. cit.*

⁶ Roger Walton, "Educating the Asphalt Arab," *Nation's Schools*, XIX (April, 1937), 34, 38.

⁷ Everett B. Sackett, "The Effect of Moving on Educational Status of Children," *Elementary School Journal*, XXXV (March, 1935), 517-26.

mental ability considered, than were the native children. Most of the migrant children in Sackett's study, however, were children of Army personnel and American merchants, while those studied in the United States have been children of migrant workers.

Only one study, that by Tetreau and Fuller,⁸ attempted to isolate the factors associated with the school achievement of migrant children. Their study showed that four factors were most closely associated with achievement: (1) father's occupation; (2) region of origin, that is, the region in which the family lived in 1930; (3) number of states lived in between 1930-39; and (4) time of arrival in Arizona, the state where this study was made.

Because of the lack of studies of migrant children whose families moved to follow the war-industry boom and because of the inconclusiveness of the evidence secured from the previous investigations, there is apparent a need for further information regarding the factors associated with the achievement of children from a migratory population.

It is reasonable to assume that the constant moving-about would influence the lives of these children. After careful consideration of the results of previous studies and of the problems created by migration, sev-

eral hypotheses concerning their school achievement were formulated. Since ability to read is basic to success in many other school subjects, the hypotheses were set up with special reference to reading.

PURPOSE OF THE STUDY

The hypotheses pertaining to the reading achievement of migrant children were limited to a consideration of those factors which are directly or indirectly dependent on migration. This limitation eliminated the wide range of influences affecting progress in reading which may be dependent on such factors as health, emotional stability in the home, or the kind and amount of reading materials provided in school. The five hypotheses which were tested in this study were worded as follows:

1. Children who have moved about from place to place and who have attended a variety of schools may represent a level of reading achievement differing from the level attained by children from a more stable population.

2. There are significant relationships between the reading achievement of migrant children and the amount of time spent in each school, the region of the last school attended, and the father's occupation.

3. Children who have migrated frequently are likely to have a wider range of interests than children who have not moved so much.

4. The homes of migrant children are less likely to provide materials and incentives for reading outside the school.

5. The child's security within his school group affects his reading achievement.

The main purpose of this study was to extend and clarify present knowl-

⁸ E. D. Tetreau and Varden Fuller, "Some Factors Associated with the School Achievement of Children in Migrant Families," *Elementary School Journal*, XLII (February, 1942), 423-31.

edge concerning the reading achievement of children from a migratory population, with particular reference to the five hypotheses. The achievement of this purpose involved two major steps: (1) determining the relative achievement of migrant and non-migrant children, with special reference to reading, and (2) analyzing the factors directly or indirectly related to migration which are associated with reading achievement. On the basis of the results secured, suggestions for helping migrant children adjust to new school situations are made.

PROCEDURES OF THE STUDY

Data for testing the five hypotheses of the study were secured from several sources. The general school achievement of the children was measured by the Stanford Achievement Test, Form E; mental ability by the Kuhlmann-Anderson Intelligence Tests; and reading ability by the Gates Reading Survey, the Gray Standardized Oral Reading Paragraphs, and the vocabulary and comprehension parts of the Stanford Achievement Test.

Information concerning the child's previous attendance and the family background was secured directly from the parents by means of a questionnaire. Where possible, the items were checked against school-registration records and employment records.

By means of an interest inventory constructed for the purpose, information about the leisure-time interests of the children and of their parents, the

number of newspapers and magazines in the home, and the possession of a library card was secured. In addition, the interest inventory requested the children to name their favorite radio programs and their favorite movies and to give three wishes.

For securing evidence of reading background, as shown by acquaintance with standard literature at their level, a graded reading check list was constructed and administered to the subjects.

Data on the social relationships among the pupils were secured by the use of a modification of the Moreno technique.⁹ Children listed their first, second, and third choices of friends with whom they liked to work and to play. These choices were analyzed and converted into a "popularity index," so that each child received an index for work and for play.

The test data were analyzed by comparing the mean scores of the grades and by determining relationships between parts of tests and between test scores and mental and chronological age. Factors associated with reading achievement which were to be studied were analyzed by comparing the third of the pupils who were highest in reading achievement in each grade with the lowest third, by comparing migrant and nonmigrant groups, and, in some cases, by comparing grade groups.

⁹ J. L. Moreno, *Who Shall Survive?* Washington: Nervous and Mental Disease Publishing Co., 1934.

SUBJECTS PARTICIPATING IN THE STUDY

The subjects participating were 97 nonmigrant and 175 migrant children in Grades III-VIII, inclusive, in the elementary school in Seneca, Illinois. In May, 1942, this town was selected

total of 397. Of the 272 children participating in the study, 134 were boys and 138 were girls. Table 1 shows the grade distribution of the boys and the girls and the percentage of migrants in each grade. Throughout the study, however, groups of various sizes were

TABLE 1
DISTRIBUTION OF NONMIGRANT AND MIGRANT SUBJECTS ACCORDING TO GRADE AND SEX

	NUMBER OF PUPILS							
	Grade III	Grade IV	Grade V	Grade VI	Grade VII	Grade VIII	All Grades	
							Number	Per Cent
Nonmigrant:								
Boys.....	9	4	5	5	8	14	45	46
Girls.....	9	6	7	11	14	5	52	54
Boys and girls.....	18	10	12	16	22	19	97	100
Migrant:								
Boys.....	17	15	24	12	14	7	89	51
Girls.....	16	17	13	16	10	14	86	49
Boys and girls.....	33	32	37	28	24	21	175	100
All subjects:								
Boys.....	26	19	29	17	22	21	134	49
Girls.....	25	23	20	27	24	19	138	51
Boys and girls.....	51	42	49	44	46	40	272	100
Percentage of migrants.	64.7	76.2	75.5	63.6	52.2	52.5	.....	64.3

by the Chicago Bridge and Iron Company as the site for a new shipyard. The resulting influx of workers increased the population greatly, and Seneca became a typical "boom town."

With the increase in population, school enrolment also increased. In June, 1942, there were 175 children in the eight elementary-school grades. At the opening of school in September, the enrolment had jumped to 304, and a count in March, 1943, showed a

compared because absences and the mobility of the school population made it impossible to secure complete data for the entire group. In most cases mental ages were compared or partialled out, so that the influence of this factor was either considered or removed.

The groups used in comparing the achievement of migrant and non-migrant children included only those cases to whom the four standardized

tests were given. The number of non-migrants included in these comparisons was seventy-five; the number of migrants, seventy-nine.

In Table 2 is presented the distribution of these subjects according to grade and mental age. None of the differences between the means is statistically significant at the 5 per cent level,¹⁰ and none except that for

COMPARISON OF ACHIEVEMENT

Total school achievement.—The largest difference in achievement as measured by the Stanford Achievement Test occurred in Grade VI, where the nonmigrant group received an average grade score more than one year higher than that of the migrants. Table 3 shows that all the differences between the two groups are significant at the 5

TABLE 2

MEAN MENTAL AGES OF SEVENTY-FIVE NONMIGRANT AND SEVENTY-NINE MIGRANT PUPILS TO WHOM ALL STANDARDIZED TESTS WERE GIVEN

GRADE	NUMBER OF PUPILS		MEAN MENTAL AGE (IN YEARS AND MONTHS)		STANDARD DEVIATION (IN MONTHS)		DIFFERENCE OF MEANS (IN MONTHS)	SIGNIFICANT RATIO
	Non-migrant	Migrant	Non-migrant	Migrant	Non-migrant	Migrant		
III.....	13	21	9-0	9-2	9.89	6.01	-2	0.71
IV.....	9	16	9-6	10-0	9.84	10.39	-6	1.35
V.....	12	14	11-0	10-9	12.11	8.18	3	.72
VI.....	11	13	13-1	12-4	13.07	13.18	9	1.60
VII.....	19	8	13-10	13-0	22.92	10.37	10	1.14
VIII.....	11	7	14-1	13-8	16.44	9.31	5	0.69

Grades IV and VI is significant at the 20 per cent level. However, the actual differences, particularly those in Grades VI and VII, indicate that some difference in achievement of these groups might be expected.

¹⁰ Significance at the 5 per cent level means that, if the true difference between the two measures is zero, a difference as large as, or larger than, the obtained difference could be secured five times out of one hundred by chance alone. The formula for t :

$$t = \frac{M_1 - M_2}{\sqrt{\left(\frac{N_1\sigma_1^2 + N_2\sigma_2^2}{N_1 + N_2 - 2} \right) \left(\frac{N_1 + N_2}{N_1 N_2} \right)}}$$

was used to determine the significant ratio when the groups were under thirty. Lindquist's table was used for converting the ratios into levels of

per cent level and all but the difference for Grade III at the 2 per cent level. Although the differences in mental age are not statistically significant, there is some basis for concluding that the mean scores in total achievement vary

significance (E. F. Lindquist, *A First Course in Statistics*, pp. 138, 240. Boston: Houghton Mifflin Co., 1942).

For groups larger than thirty, the formula for critical ratio was used, and a ratio of 2.0 was arbitrarily chosen as the point determining statistical significance. This ratio means that, if the true difference between the two measures is zero, a difference as large as, or larger than, that obtained when the critical ratio is 2.0 could be secured about five times out of one hundred by chance alone.

with the average mental ages of the various grades.

Reading achievement.—The scores on the reading tests were analyzed in greater detail because the study was particularly concerned with reading achievement. Table 4 shows that none of the differences between means in the scores on the Gates Reading Survey is significant at the 5 per cent level. The largest actual difference in

though nonmigrants in Grades V and VIII had higher mean mental ages, migrants in these grades obtained higher mean scores on the oral reading test.

The two reading tests were correlated with mental age and with chronological age. When chronological age was partialled out, the Gates Reading Survey and mental age showed correlations of $.746 \pm .051$ for the non-

TABLE 3
MEAN GRADE SCORES OF NONMIGRANT AND MIGRANT GROUPS
ON STANFORD ACHIEVEMENT TEST

GRADE	MEAN SCORE		STANDARD DEVIATION		DIFFERENCE IN MEANS	SIGNIFICANT RATIO
	Non- migrant	Migrant	Non- migrant	Migrant		
III.....	3.29	3.58	0.80	0.66	-0.29	1.29
IV.....	4.09	4.49	.91	.75	-.40	4.53
V.....	6.38	5.72	1.06	.98	.66	3.92
VI.....	8.10	6.96	1.32	1.26	1.14	5.69
VII.....	9.05	8.60	1.63	1.22	.45	7.17
VIII.....	9.38	9.09	1.48	0.54	0.29	2.63

mean score on the Gates Reading Survey was found in Grade VI. There was also a larger difference in mental age between the two groups for this grade. On the basis of these data, the conclusion may be drawn that, although the differences in mean score are not statistically significant, the differences may not have arisen by chance alone since they are consistent with differences in mean mental age.

Table 4 also shows similar data for the Gray Standardized Oral Reading Paragraphs. The differences in Grades III, IV, and VII are statistically significant at the 1 per cent level. Al-

migrants and $.886 \pm .024$ for the migrants. Similar correlations for the Gray Standardized Oral Reading Paragraphs were slightly lower for the nonmigrants ($.741 \pm .052$) and considerably lower for the migrants ($.507 \pm .084$). These correlations show that mental age is closely associated with the reading achievement of the children studied.

Various parts of the reading tests were correlated with one another in order to determine whether or not reading achievement as measured by the Gates Reading Survey was typical of the reading achievement of the

children as measured by the other tests. The correlations ranged from .905 to .967. Since these relationships were so high, the Gates Reading Survey was used in the subsequent analyses as typical of the reading achievement of the pupils tested.

lowest averaged three and one-half schools. Although the groups were too small to justify broad generalizations, the data show that the number of schools attended apparently has little relation to reading achievement. Whatever differences exist seem to

TABLE 4
MEAN GRADE SCORES OF NONMIGRANT AND
MIGRANT GROUPS ON READING TESTS

GRADE	MEAN SCORE		STANDARD DEVIATION		DIFFERENCE IN MEANS	SIGNIFICANT RATIO
	Non- migrant	Migrant	Non- migrant	Migrant		
III. IV. V. VI. VII. VIII. III. IV. V. VI. VII. VIII.	Gates Reading Survey					
	3.71	3.92	1.18	0.78	-0.21	0.60
	4.24	4.32	1.13	1.10	- .08	.17
	5.80	5.47	1.43	1.11	.33	.63
	7.79	6.74	1.52	1.22	1.05	1.80
	8.04	7.31	1.86	1.41	.73	.96
	8.40	8.21	1.65	0.52	0.19	0.28
	Gray Standardized Oral Reading Paragraphs					
	3.28	3.80	1.72	1.08	-0.52	4.13
	3.50	4.42	2.06	1.57	- .92	4.09
	5.13	5.28	1.63	.67	- .15	1.06
	6.95	6.73	1.86	1.73	.22	1.00
	7.62	6.89	2.17	1.68	.73	3.15
	8.25	8.43	2.19	1.86	-0.18	0.52

TIME SPENT IN EACH SCHOOL

Average number of schools attended.
—A comparison of the average number of schools attended by the pupils ranking in the highest and the lowest thirds in reading achievement in each grade is shown in Table 5. The pupils making the highest scores attended more schools than those in the lowest groups, with the exception of Grade III, where both the highest and the

lowest averaged three and one-half schools. Although the groups were too small to justify broad generalizations, the data show that the number of schools attended apparently has little relation to reading achievement. Whatever differences exist seem to

Average number of moves per year.—To derive an index of time spent in each school, the total number of moves, that is, changes in residence, made by a child during his educational career was divided by the total number of years that he had spent in school. The resulting quotients were then correlated with score on the

Gates Reading Survey and with mental and chronological ages.

The correlation between the reading-grade score and the average length of time spent in each school, when chronological age and mental

REGION OF LAST SCHOOL ATTENDED

On the assumption that the entire group of migrant children would be distributed as are the highest and the lowest thirds, Table 6 shows that more than three-fourths of the children were

TABLE 5
NUMBER OF DIFFERENT SCHOOLS ATTENDED BY MIGRANT PUPILS IN
HIGHEST AND LOWEST THIRDS ON GATES READING SURVEY

GRADE AND GROUP	NUMBER OF PUPILS HAVING ATTENDED—								AVERAGE NUMBER OF SCHOOLS ATTENDED
	Nine Schools	Eight Schools	Seven Schools	Six Schools	Five Schools	Four Schools	Three Schools	Two Schools	
Grade III:									
Highest third....	I	.....	.....	.....	I	3	6	4	3.5
Lowest third....	.....	.....	.....	.....	I	I	I	I	3.5
Grade IV:									
Highest third....	.....	.....	.....	.....	.....	2	3	2	3.0
Lowest third....	.....	.....	.....	.....	.....	I	3	9	2.4
Grade V:									
Highest third....	.....	I	.....	.....	.....	4	4	2	3.6
Lowest third....	.....	.....	.....	I	I	I	3	3	3.3
Grade VI:									
Highest third....	.....	I	.....	.....	2	3	2	2	4.0
Lowest third....	.....	.....	.....	I	I	I	I	3	3.4
Grade VII:									
Highest third....	.....	.....	.....	I	I	2	.....	.....	4.8
Lowest third....	.....	.....	.....	2	I	2	7	2	3.6
Grade VIII:									
Highest third....	.....	.....	.....	I	.....	I	I	I	3.8
Lowest third....	.....	.....	.....	.....	I	I	I	3	3.0
All grades:									
Highest third....	I	2	.....	2	4	15	16	11	3.7
Lowest third....	.....	.....	.....	4	5	7	16	21	3.2

age were partialled out, was $-.047 \pm .083$ —a result which indicates that the average number of moves each year had little relation to the child's reading achievement. The correlation between the average number of moves and mental age indicated that there is no basis for inferring that the brighter pupils moved more often than the duller, or vice versa.

from the Middle West, and about four-fifths of these were from Illinois. The Southwest had the second largest representation with 13 per cent, and the Southeast was next with 8 per cent. Only 2 per cent of the children last attended school in the Northeast, while the Northwest and the Far West were not represented in the groups compared.

Except for the group from the Southwest, the region of the country from which the migrant children came did not appear to be significantly associated with their reading achievement. It must be remembered, however, that all the regions of the country were not represented and that the group does not represent a cross-section of the migrant population in the country as a whole.

OCCUPATION OF FATHER

The occupations reported were classified arbitrarily, wherever data were available, into six categories: (1) professional, (2) managerial, (3) clerical and trade, (4) foremen, (5) skilled, and (6) unskilled. In the case of the occupation listed merely as "shipyards" or "Du Pont," no further classification could be made.

The data in Table 7 show a similar range in occupation for the highest

TABLE 6
REGION OF LAST SCHOOL ATTENDED BEFORE
COMING TO SENECA BY MIGRANT PUPILS
WHO RANKED IN HIGHEST AND LOWEST
THIRDS ON GATES READING SURVEY

REGION	NUMBER OF PUPILS		PERCENTAGE OF PUPILS		TOTAL	
	High- est Third	Low- est Third	High- est Third	Low- est Third	Num- ber	Per Cent
Illinois.....	41	30	72	52	71	62
Other mid- west states	7	11	12	19	18	15
Total mid- west....	48	41	84	71	89	77
Southwest...	3	12	5	20	15	13
Southeast....	4	5	7	9	9	8
Northeast....	2		4		2	2
Far West.....						
Northwest....						
Total.....	57	58	100	100	115	100

and the lowest reading thirds in each group. However, in the case of children whose fathers were in managerial

TABLE 7
OCCUPATIONS OF FATHERS OF NONMIGRANT AND MIGRANT PUPILS WHO RANKED
IN HIGHEST AND LOWEST THIRDS ON GATES READING SURVEY

OCCUPATION OF FATHER	PRESENT OCCUPATION								FORMER OCCUPATION OF FATHERS OF MIGRANT CHILDREN			
	Number of Pupils				Percentage of Pupils							
	Nonmigrant		Migrant		Nonmigrant		Migrant		Number of Pupils		Percentage of Pupils	
	High- est	Low- est	High- est	Low- est	High- est	Low- est	High- est	Low- est	High- est	Low- est	High- est	Low- est
Professional.....	6	2	3	4	15	8	5	7	4	3	11	7
Managerial.....	4	1	2	.....	10	4	4	.....	6	4	16	9
Clerical and trade.....	2	2	5	3	5	8	9	5	2	1	5	2
Foreman.....	5	2	34	25	13	8	60	43	17	22	45	51
Skilled.....	4	4	5	12	10	15	9	21	.....	.....	.....	.....
Shipyards.....	10	9	.....	2	26	35	.....	3	.....	.....	.....	.....
DuPont.....	5	4	8	10	13	15	14	17	9	13	24	30
Unskilled.....	.....	.....	.....	1	.....	.....	.....	2	.....	.....	.....	.....
Unemployed.....	2	2	.....	1	5	8	.....	2	.....	.....	.....	.....
Deceased.....	1	.....	.....	.....	3	.....	.....	.....	.....	.....	.....	.....
Retired.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
Total.....	39	26	57	58	100	101	101	100	38	43	101	99

and clerical positions and those whose fathers worked for Du Pont, the percentages of permanent residents reading in the highest group are larger than the similar percentages for the migrant children. Nine per cent more of the nonmigrant fathers who worked for Du Pont had children in the lowest third than in the highest third in reading achievement.

Consistent with the findings of Tetreau and Fuller,¹¹ a larger percentage of fathers of the best readers than of the poorest readers were formerly in managerial or clerical and trade positions, while a larger percentage of fathers of children in the lowest than in the highest third were skilled and unskilled workers.

¹¹ E. D. Tetreau and Varden Fuller, *op. cit.*

[*To be concluded*]

PART II

FACTORS ASSOCIATED WITH THE READING ACHIEVEMENT OF CHILDREN FROM A MIGRATORY POPULATION. II¹

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★

INTERESTS OF MIGRANT AND NONMIGRANT CHILDREN

MANY of the children of migrant workers have opportunities to come into contact with great varieties of individuals, schools, and communities. Consequently their range of interests might be expected to be larger than that of nonmigrants. The interests of the children measured in this study were of three types: (1) leisure-time interests, (2) favorite types of radio programs, and (3) favorite types of movies.

Leisure-time interests.—The leisure-time interests most popular with all children were “play,” “read,” “work at home,” and “go to the movies.” The absence of hobbies or other types of individual interests, except in the case of a few children who indicated drawing and making model airplanes as their favorite occupations, was noticeable, as was the infrequent mention of listening to the radio.

Table 8 shows that there were no large differences between the interests of nonmigrant and migrant children. Migrant children spent more

time than did nonmigrant children in indoor play, and the nonmigrant spent more time than did the migrant in working on jobs. The greatest difference in interest in reading between the highest and the lowest thirds was found in Grade VI for the nonmigrants and in Grade V for the migrants. In the case of the total group, the highest group spent 6 per cent more time in reading. However, no check was made of *what* was read, and the reading reported may have consisted merely in looking at the “funnies” in the newspapers.

Favorite types of radio programs.—The favorite radio programs were classified under seven headings. Table 9 shows that nonmigrant children liked dramatic and musical programs better than did migrant children, while migrant children liked adventure and mystery programs better than did nonmigrant children. Half of both groups indicated that humorous programs were their favorites. News and quiz programs were not popular with either group.

A larger percentage of children in the highest than in the lowest groups liked humor and mystery programs, while a larger percentage of children

¹ The first part of this article appeared in the December, 1944, issue of the *Elementary School Journal*.

in the lowest reading groups liked adventure. Other data showed that adventure programs were popular in Grades V, VI, and VII; news, popular

music, and mystery programs were popular in Grades VII and VIII.

Favorite types of motion pictures.—Motion pictures were classified as

TABLE 8

PERCENTAGE OF LEISURE TIME SPENT IN VARIOUS OCCUPATIONS BY NONMIGRANT AND MIGRANT PUPILS WHO RANKED IN HIGHEST AND LOWEST THIRDS ON GATES READING SURVEY

LEISURE-TIME OCCUPATION	PERCENTAGE OF TIME SPENT						
	Highest Third (57)*	Lowest Third (83)	Boys (72)	Girls (68)	Non- migrant (71)	Migrant (69)	Total Group (140)
Play outdoors.....	27	24	26	26	25	26	26
Read.....	18	12	9	21	17	14	15
Work at home.....	13	16	16	13	16	14	15
Go to movies.....	10	14	13	11	11	13	12
Play indoors.....	7	6	8	6	3	9	7
Work on job.....	6	6	12	1	9	4	6
Listen to radio.....	4	3	2	5	3	4	4
Do school work.....	3	4	1	5	3	4	3
Go to meetings.....	2	5	4	3	3	3	3
Sew.....	2	4	.....	5	3	2	3
Color, draw.....	3	2	2	3	4	1	2
Go to town.....	3	1	3	1	2	2	2
Work with wood.....	2	2	4	.....	1	3	2
Total.....	100	99	100	100	100	99	100

* The figures in parentheses show the number of pupils in each group who reported their leisure-time occupations.

TABLE 9

FAVORITE TYPES OF RADIO PROGRAMS OF NONMIGRANT AND MIGRANT PUPILS WHO RANKED IN HIGHEST AND LOWEST THIRDS ON GATES READING SURVEY

TYPE OF PROGRAM PREFERRED	FREQUENCY OF MENTION BY—					PERCENTAGE OF MENTION BY—				
	Highest Third (73)*	Lowest Third (63)	Non- migrant Pupils (50)	Migrant Pupils (86)	Total Group (136)	Highest Third	Lowest Third	Non- migrant Pupils	Migrant Pupils	Total Group
Humor.....	80	57	53	84	137	54	46	51	50	50
Adventure...	25	35	17	43	60	17	28	16	26	22
Mystery.....	24	11	11	24	35	16	9	11	14	13
Drama.....	7	6	9	4	13	5	5	9	2	5
Music.....	3	8	8	3	11	2	7	8	2	4
News.....	5	4	4	5	9	3	3	4	3	3
Quiz.....	5	2	2	5	7	3	2	2	3	3
All types..	149	123	104	168	272	100	100	101	100	100

* The figures in parentheses show the number of pupils in each group who reported their favorite radio programs.

TABLE 10

FAVORITE TYPES OF MOTION PICTURES OF NONMIGRANT AND MIGRANT PUPILS IN GRADES IV-VIII, INCLUSIVE, WHO RANKED IN HIGHEST AND LOWEST THIRDS ON GATES READING SURVEY

TYPE OF PICTURE PREFERRED	FREQUENCY OF MENTION BY—					PERCENTAGE OF MENTION BY—				
	Highest Third	Low- est Third	Non- migrant Pupils	Mi- grant Pupils	Total Group	Highest Third	Low- est Third	Non- migrant Pupils	Mi- grant Pupils	Total Group
War.....	24	12	15	21	36	36	21	33	27	29
Musical comedy.....	16	14	12	18	30	24	25	27	23	24
Romance.....	16	7	10	13	23	24	13	22	17	19
Adventure.....	6	6	3	9	12	9	11	7	12	10
Western.....	2	10	2	10	12	3	17	4	13	10
No favorite.....		5	1	4	5		9	2	5	4
Cartoon.....	1	1	1	1	2	1	2	2	1	2
Mystery.....	2	1	1	2	3	3	2	2	3	2
All types.....	67	56	45	78	123	100	100	99	101	100

TABLE 11

LEISURE-TIME OCCUPATIONS OF PARENTS OF NONMIGRANT AND MIGRANT PUPILS WHO RANKED IN HIGHEST AND LOWEST THIRDS ON GATES READING SURVEY

INTEREST	PERCENTAGE OF PARENTS					
	Nonmigrant		Migrant		Total Group	
	Highest Third (68)*	Lowest Third (40)	Highest Third (76)	Lowest Third (98)	Highest Third (72)	Lowest Third (69)
Clean up.....		3	3	4	3	7
Go to movies.....	3†	10	5	8	8	17
Go visiting.....	9	3	3	4	11	7
Listen to radio.....	12	3	4	7	15	12
Participate in sports.....	3		7	1	10	1
Play cards.....	10		5	5	15	7
Play with children.....	4		9	1	14	1
Read.....	31	13	20	20	50	36
Read books.....	7	5	4	5	11	10
Read magazines.....		3		1		3
Read newspapers.....	26	25	30	20	57	43
Rest.....	13	18	21	27	35	48
Sew.....	16	5	12	8	28	14
Write letters.....	3	3	1	2	4	4
Work in garden.....	10	20	11	12	21	29

* The figures in parentheses show the number of parents in each group who reported their occupations.

† To be read: Three per cent of the parents of nonmigrant children who ranked in the highest third on the Gates Reading Survey indicated that they went to the movies during their leisure time.

shown in Table 10. War pictures were the most popular type with the total group; musical comedy and romance were next. Migrant children showed greater preference than nonmigrants for western and for adventure types.

Thirty-six per cent of the favorite motion pictures of the highest group

poorest readers. On the other hand, the poorest readers preferred western movies.

INCENTIVES FOR READING AND
READING BACKGROUND

Parents' interest in reading.—The children reported reading as the most

TABLE 12
READING MATERIALS AVAILABLE TO NONMIGRANT AND MIGRANT PUPILS

READING MATERIAL	PERCENTAGE OF NONMIGRANT PUPILS			PERCENTAGE OF MIGRANT PUPILS		
	Highest Third	Lowest Third	Total Group*	Highest Third	Lowest Third	Total Group*
Number of subjects reporting:						
Number of newspapers in home:	(33)	(19)	(75)	(38)	(46)	(127)
Four.....		5	1	3		1
Three.....	24	11	20	24	11	13
Two.....	58	32	44	24	11	24
One.....	15	42	31	50	72	57
None.....	3	11	4		7	6
Number of subjects reporting:						
Number of magazines in home:	(34)	(19)	(75)	(33)	(46)	(117)
Five.....	9		5	6		2
Four.....	6	11	9	6		4
Three.....	32	16	23	12	7	7
Two.....	35	21	31	12	13	17
One.....	15	21	19	39	37	33
None.....	3	32	13	24	43	37
Number of subjects reporting:						
Possessing library card....	(33)	(18)	(72)	(36)	(47)	(119)
	85	72	81	33	19	24

* The total here includes the middle third.

in reading achievement were based on the war, whereas only 21 per cent of the favorite movies of the lowest group were of this type. Romantic pictures, including the movie versions of famous books, were also more popular with the best readers than with the

frequent leisure-time activity of their parents. The data in Table 11 show that 57 per cent of the parents of the best readers and 43 per cent of the parents of the poorest readers spent time in reading newspapers. Approximately the same percentage of both

groups read books, and less than 5 per cent of the total group read magazines.

Availability of reading materials.—The average number of newspapers and magazines in the home and the number of pupils possessing a library card are shown in Table 12 for both migrant and nonmigrant groups and

nonmigrants took one magazine, but a larger percentage of nonmigrants took two or more. The data in Table 12 also show a distinct trend for homes of the best readers to have more magazines than homes of the poorest readers.

Over three times as many nonmigrant as migrant children reported having library cards, and more of the best readers in both migrant and nonmigrant groups had cards than did the poorest readers.

Reading background.—Evidence of the children's acquaintance with standard literature at their level was secured as an indication of their reading background. The percentage of books read by each child from the graded check list presented to him was computed and used as the basis for comparison. The median percentages of books read by the best and the poorest reading groups are shown in Table 13 for migrants and nonmigrants. The nonmigrant best readers had read about twice as many books on the lists as had the poorest readers, and the migrant best readers had read about one and one-fourth times as many as had the migrant poorest readers.

A difference of over 6 per cent is shown in favor of the poorest migrant readers in comparison with the poorest nonmigrant readers. Whether or not this difference is a result of the experiences of the migrant pupils cannot be determined, but it is logical to suppose that the mobility of the migrants increased the variety of material at their level which they had had an opportunity to read.

TABLE 13

PERCENTAGE OF BOOKS ON CHECK LIST WHICH HAD BEEN READ BY NONMIGRANT AND MIGRANT PUPILS WHO RANKED IN HIGHEST AND LOWEST THIRDS ON GATES READING SURVEY

Group	Number of Subjects Reporting	Median Percentage of Books Read	Range in Percentages
Highest third:			
Nonmigrant....	37	19.7	5-39
Migrant.....	42	20.2	5-64
Lowest third:			
Nonmigrant....	21	9.8	0-84
Migrant.....	39	16.1	0-64
Total group (including middle third):			
Nonmigrant....	83	22.9	0-84
Migrant.....	134	24.8	0-64

for the best and the poorest readers. A larger percentage of nonmigrant than of migrant families took two or more newspapers, while a larger percentage of migrant families took only one. The differences in most cases were in favor of the groups with the highest reading achievement.

Thirty-seven per cent of the migrant homes had no magazines, while only 13 per cent of the nonmigrant homes had none. More migrants than

SECURITY IN THE SCHOOL GROUP

Two types of data were obtained as evidence of the child's security within his school group. The choices of friends in work and in play situations revealed the extent of the child's acceptance by his peers, and the wishes expressed on the interest inventory gave some evidence of the sources of worry or conflict on the part of the child.

Choice of friends.—The number of times that a child was chosen as a partner for work or for play in comparison with the maximum number possible was converted into a "work popularity index" and a "play popularity index." When the work indices for the nonmigrant children were correlated with reading achievement, the resulting coefficient was $.336 \pm .102$, indicating a small degree of relationship. The similar correlation for the migrant children was $.052 \pm .112$, showing no relationship. Although the difference between these two correlations is not statistically significant, a closer relationship apparently exists between the work index and the reading achievement of the nonmigrant children.

Correlations between the play indices and reading achievement of nonmigrant and migrant children were $.183 \pm .112$ and $-.037 \pm .112$, respectively, neither of which is of sufficient size to show any real relationship.

Had the children made the same choices for both work and play, the work-play correlations would have

been perfect. However, such correlations were $.839 \pm .034$ for the nonmigrant children and $.783 \pm .044$ for the migrant children. The possibility that migrant children would be chosen as friends was about the same as that for nonmigrant children, since the difference between the correlations is not statistically significant.

TABLE 14

WORK AND PLAY INDICES RECEIVED BY
NONMIGRANT AND MIGRANT PUPILS WHO
RANKED IN HIGHEST AND LOWEST
THIRDS ON GATES READING SURVEY

GROUP	NUMBER OF PUPILS		MEDIAN INDEX	
	High- est Third	Low- est Third	High- est Third	Low- est Third
Work index:				
Nonmigrant...	41	26	29.5	15.8
Migrant.....	55	48	20.8	9.8
Play index:				
Nonmigrant...	41	26	24.5	14.5
Migrant.....	55	48	15.6	14.5

In all cases, as shown in Table 14, children in the highest reading groups had higher median work and play indices than did those in the lowest reading groups. Nonmigrants generally had higher median indices than did the migrants, except in the case of the play index of the lowest reading groups.

The wishes of children.—The wishes expressed in the interest inventory were divided into eight classes. Only the first and the second wishes were tabulated because several children gave only two. The categories for

classification were: (1) things, (2) war, (3) home, (4) school, (5) travel, (6) vocation, (7) fancy, and (8) weather. The outstanding differences between nonmigrant and migrant groups related to the number of wishes concerning the war and school. The tabulation, not given here, showed that more migrant children than nonmigrant children made wishes about the war and about school. The war probably has a more personal relation to the migrant group, since practically all their parents were working in the shipyards and because the war was directly or indirectly responsible for their leaving their former homes. Many of the migrant children wished "to go back home."

FACTORS ASSOCIATED WITH READING ACHIEVEMENT OF GOOD READERS

Consistent with the results of previous research, the results of this study showed that mental ability had a close relation to reading achievement. The correlation between reading achievement (as measured by the Gates Reading Survey) and mental age (as measured by the Kuhlmann-Anderson Intelligence Tests) was $.886 \pm .024$ for the migrant children. Furthermore, the children who ranked high in reading achievement, whether migrant or nonmigrant, also ranked high in the other measures applied. They were able to accommodate themselves to new and varied situations and to profit by their experiences, whereas the duller children and the slower readers were handicapped by

their inability to profit from the very experiences which the brighter children used to advantage.

When the highest and the lowest thirds in reading achievement were compared, the former exhibited: (1) higher mental age; (2) higher level of occupation of father; (3) greater interest in reading as a leisure-time activity; (4) preference for humor and mystery in radio programs; (5) preference for war and romantic movies, including those based on famous books; (6) greater interest of parents in reading; (7) larger number of newspapers in the home; (8) larger number of magazines in the home; (9) more frequent possession of a library card; (10) broader reading background as measured by acquaintance with standard literature; and (11) greater popularity in work and in play situations. In general, it appears that many of the factors studied are associated with superior reading achievement regardless of the status of the children in respect to migration.

FACTORS PARTICULARLY ASSOCIATED WITH READING ACHIEVEMENT OF MIGRANT CHILDREN

Four of the factors studied seemed to be particularly significant for migrant children as compared with nonmigrant children. Some of these factors are more directly related to the mobility of the children than are others.

The first factor refers to the region of last school attended by migrant children. Although the data in this

study are limited, they tend to support the findings of Tetreau and Fuller,² who reported that the region of origin did show a relationship to school achievement.

The second factor relates to the number of magazines in the home and the possession of a library card. Migrant homes did not have so many magazines as nonmigrant homes, and fewer migrant than nonmigrant children had library cards. The findings also showed that the reading achievement of the children varied with these factors. That is, the children who had most magazines in their homes and who had library cards were, in general, better readers than were the children who had fewer magazines and who did not possess library cards.

The third factor deals with the reading background. Although mobility did not seem to affect the background acquired by the best migrant readers, it did appear to work to the advantage of the poorest migrant readers when compared with nonmigrant children. The experiences in several schools seemed to have given the poorest migrant readers added contact with a variety of materials which increased their acquaintance with standard literature at their level.

The fourth factor is concerned with the wishes expressed by the migrant children. The fact that many of them

made wishes about school and wished to go back home indicated some lack of adjustment to the new environment. However, such factors are extremely difficult to isolate and demand further study.

Because the factors which affect the reading achievement of children do not operate separately but are interrelated in complex patterns, merely noting relationships between each factor and achievement for groups of children is not sufficient for use with individuals. In order, therefore, to secure the most valid interpretation of the effect of these factors upon individuals, the school must study each child separately, and all the information available about him must be analyzed in relation to the cluster of factors that influence his reading.

PROBLEMS FOR FURTHER STUDY

Although the results of this study show that migration as such does not affect the school achievement of children to any great extent, there are problems which need to be studied so that the best methods for utilizing the results of available research in actual school situations can be determined. The curriculum and the promotion policies of the school need intensive study so that the most effective types of modifications for migrant children can be determined. Since children from a migratory population may have diverse backgrounds, schools need to understand such differences and to know how to utilize them to best advantage.

² E. D. Tetreau and Varden Fuller, "Some Factors Associated with the School Achievement of Children in Migrant Families," *Elementary School Journal*, XLII (February, 1942), 423-31.

PRACTICAL IMPLICATIONS OF THE STUDY

Although the findings of this study are not conclusive, they have practical implications for schools which serve migrant children, particularly children whose fathers are engaged in war industries. Suggestions for applying the implications were secured from the analyses of the data and from the classroom experiences provided by this study. Since a high relationship between reading achievement and total school achievement was found, the implications that follow are made for the total school program rather than for the reading program exclusively.

1. Differences in the achievement and in the factors affecting the reading achievement of migrant and nonmigrant children are, in general, differences of degree rather than of kind. Recent studies in child development emphasize the fact that the child is the product of many forces—his physical and mental capacities, his home and community environment, his training and experiences. These factors influence children in varying degrees. The factor which most affects the total adjustment of the individual child may be physical for one, mental for another, and emotional for a third. For the migrant child, a most urgent need may be better adjustment to a new and oftentimes complex environment away from his own home. The same symptoms may occur in other children, but their causes may be different. It is imperative, therefore,

that teachers approach migrant children with the same attitude which they display toward any child—with the realization of the need for determining the reasons for any maladjustment and for removing or alleviating the cause.

2. Schools should help new entrants adjust to their environment. Too often schools have expected children to adjust themselves without much assistance. Schools need to develop a program of orientation whereby the new entrants can be gradually inducted into the school and the community. Such a program of orientation might include three parts: getting information about the child, helping the child become acquainted with his environment, and helping the child find his place in the school group.

On the basis of the evidence secured, the information which seems desirable for schools to secure includes data on the family background, the school history of the child, his mental ability, his reading level or his general achievement level, and his special interests and abilities, as well as his difficulties and needs.

Schools in areas most directly affected by migration should adopt standardized forms of records so that transfer from school to school and from city to city can be facilitated. Schools should develop a schedule for testing new entrants so that information regarding their mental ability and school achievement can be obtained as quickly as possible. Schools

should also secure information regarding the special interests and abilities of the child, since these are often the avenues through which a pupil finds his place in the school group. Lastly, schools should secure a measure of the personal relationship of the child to others in his group. The technique described for securing popularity indices is practical for teacher use. On the basis of the results, children in need of special guidance and "key" children can be identified. The latter can then assist in forming group opinion and in developing attitudes.

The classroom teacher can secure the co-operation of the resident children (including new entrants who have become adjusted to the school). One of these children can take a new child on a tour of the building, take him to the playground at recess, and walk part of the way home with him if necessary. Other procedures can be added to the routine through the suggestions of the children, especially those who have been inducted according to the plan in use.

Teachers can give the child a feeling that his contributions are needed and welcomed by the group. Since he has had experiences that are different from those of other children, teachers should utilize every opportunity to let

the migrant child share his experiences with others.

3. The objectives of the elementary school should be stated in terms of successive levels of achievement so that the curriculum can be organized into scaled units of work which cut across subject-matter lines. These units would provide for flexibility in the school program, make it easier for schools to absorb new pupils, and eliminate needless repetition.

4. Schools should take the initiative in securing the co-operation of the homes. Since migrant parents are also new to the community, they need orientation as much as do their children. Furthermore, through co-operation of the home and school, the needs of the children can be more fully met.

5. Schools should enlist the co-operation of other educational agencies in the community. The public library, churches, clubs, and Boy and Girl Scouts can help the schools provide a balanced educational program.

The solution to the problem of providing adequate education for the children of migrant workers rests on the willingness of educational agencies to diagnose the needs of the children and to provide for these needs as adequately as they possibly can.

